Cerebral venous sinus thrombosis during superselective intra-arterial infusion of cisplatin and concomitant radiotherapy for maxillary squamous cell carcinoma

Shun Okamura,[1] Yuki Saito,[1] Harushi Mori,[2] Tatsuya Yamasoba[1]

[1]Otolaryngology-Head and Neck Surgery, University of Tokyo, Bunkyo-ku, Tokyo, Japan
[2]Radiology, University of Tokyo, Bunkyo-ku, Tokyo, Japan

Correspondence to
Dr Shun Okamura, we_have_silver_lining@yahoo.co.jp

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DESCRIPTION

A 67-year-old man was referred to our department because of epistaxis. CT demonstrated that a mass had destroyed the posterior bony wall of the left paranasal sinus. Histopathological examination revealed squamous cell carcinoma of the maxillary sinus, and clinically staged T4aN0M0 was diagnosed. MRI showed no thrombus in the brain blood vessels.

The initially planned treatment consisted of seven courses of intra-arterial infusion (IA) of weekly cisplatin (100 mg/m^2) with intravenous detoxification by sodium thiosulfate and concomitant radiotherapy (RT) (total 70 Gy).[1] CT angiography revealed that the maxillary and facial arteries were feeding the tumour. After four courses of IA, MRI and CT (figure 1A) were performed for an interim evaluation. Although the size of the tumour was significantly reduced, cerebral venous thrombus was present in the left transverse sigmoid sinus and interrupted the blood flow without cortical venous reflux or brain oedema (figure 1B and C). Because the patient showed no signs of neurological deficits, treatment was continued, as planned, with heparin anticoagulation.[2]

To our knowledge, this is the first report of cerebral venous central thrombosis during IA-RT. We hypothesised four possible reasons for venous central thrombosis: (1) the indwelling catheter in; (2) the radiation induced endothelial damage; (3) the intravenous sodium thiosulfate caused phlebitis; and (4) the maxillary sinus cancer itself induced coagulopathy. The venous thrombus gradually reduced in size, and the planned course of IA-RT was completed.

Contributors SO wrote this case report. YS contributed to the preparation and writing of the report. HM contributed to the selection of the photos. TY approved the final version.

Competing interests None declared.

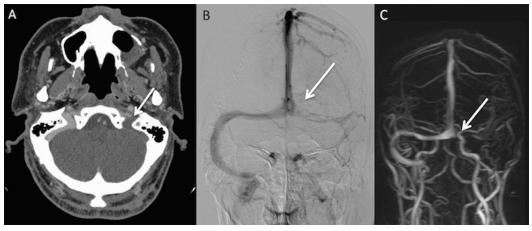

Figure 1 Cerebral venous thrombus is present in the left transverse sigmoid sinus, interrupting blood flow (white arrows).

Learning points

- It is possible that cerebral venous central thrombosis is complicated by intra-arterial infusion.
- Patients sometimes show no signs of neurological deficits. Hence, regular diagnostic imaging is needed.
- We hypothesise that the cerebral venous central thrombosis was caused by the catheter, irradiation, medications or coagulopathy.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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